

## **CLAIMS**

### **What is claimed is:**

1. A roll structure having a fiber-containing roll cover over a mandrel, which roll structure has at least one end assembly comprising:  
5 an end plate pressed against said fiber-containing roll cover;  
a compression element spaced apart from said roll cover by said end plate and abutting against said end plate;  
a shaft spaced apart from said roll cover on a side of said end plate opposite said roll cover; and  
10 elongated compression means at least substantially housed within said shaft which compression means exerts pressure against said compression element.
2. The structure of claim 1, wherein said end plate is an at least  
15 substantially circular end plate having a flat major face pressed against an end face of said fiber-containing roll cover.
3. The structure of claim 1, wherein said compression element  
20 is pressed against said end plate.
4. The structure of claim 3, wherein said compression element has an indentation in a face opposite the face pressed against said end plate and said elongated compression means engages said compression element in said indentation.  
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5. The structure of claim 4, wherein said compression element is a pin, said indentation is a slot in said pin, and said elongated compression means has a tapered end engaging said slot.

6. The structure of claim 4, wherein said indentation is a socket and said compression means has a ball engaging said socket.

7. The structure of claim 4, wherein said compression element  
5 is a pin positioned within a slot of said roller end assembly.

8. The structure of claim 1, wherein said shaft is positioned at least substantially outwardly from said end plate along the axis of said roll cover.

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9. The structure of claim 1, wherein said shaft has an elongated internal bore, said shaft has internal threading within said bore, said elongated compression means is a screw means having external threading that engages the internal bore threading whereby rotating said elongated  
15 compression means applies force against said compression element.

10. The structure of claim 1, wherein said end plate, compression element, shaft and elongated compression means are all rigid metal elements.

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11. The structure of claim 1, further including setting means for securing said compression means in position.

12. A compression assembly for a fiber roll cover including a  
25 shaft having an elongated axial length, which shaft is positioned outwardly away from said roll cover, an elongated compression means housed within said shaft, a roll cover end plate and means for communicating compressive force from said elongated compression means to said end plate.

13. The method of compressing the cover of a fiber-containing roll cover having a roll end assembly including an end plate in contact with said fiber-containing roll cover, which method comprises:

- 5 (a) establishing a shaft spaced outwardly away from said roll cover along the axis of said roll;
  - (b) providing compression means associated with said shaft;
  - (c) providing a compression element between said end  
10 plate and said compression means; and
  - (d) engaging said compression means with said compression element, while engaging said compression element with said end plate,
- whereby compressive force from said compression  
15 means is transmitted through said compression element and said end plate to said fiber cover.

14. The method of claim 13, wherein there is established a shaft having an internally threaded bore hole and said compression means  
20 comprises an externally threaded rod with the threads of said rod engaging the threads of said bore hole.

15. The method of claim 13, wherein there is provided an indented pin compression element and said rod has a tapered end  
25 engaging said indentation.

16. The method of claim 13, wherein there is provided a compression element having a socket and said rod has a ball shaped end engaged in said socket.

17. The method of claim 13, wherein said compression means comprises (a) an elongated rod, (b) a first plate disposed at an end of said rod opposite an external end of said rod, (c) a plurality of springs, and (d)  
5 a second plate abutting said compression elements.

18. In a fiber-containing roll structure in contact with an end assembly thereof, the improvement comprising one or more of a ball and socket, tapered rod and indentation, apertured rod and pin, or similar  
10 assembly transmitting compressive force to said end assembly.

19. An assembly adapted for inclusion in the end structure of a fiber-containing roll structure which assembly comprises one or more of a ball and socket, tapered rod and indentation, apertured rod and pin, or  
15 similar assembly.

20. A roll structure having a fiber-containing roll cover over a mandrel, which roll structure has at least one end assembly comprising:  
an end plate pressed against said fiber containing roll cover;  
20 a compression element spaced apart from said roll cover by said end plate and abutting against said end plate;  
a shaft spaced apart from said roll cover on a side of said end plate opposite said roll cover; and  
compression means housed within said shaft, said compression  
25 means comprising, (a) an elongated rod, (b) a first plate disposed at an end of said rod opposite an external end of said rod, (c) a plurality of springs, and (d) a second plate abutting said compression element;  
wherein said compression means exerts pressure against said compression element and said end plate to said fiber cover.

21. The structure of claim 20, wherein said end plate is an at least substantially circular end plate having a flat major face pressed against an end face of said fiber-containing roll cover.

5        22. The structure of claim 20, wherein said compression element is pressed against said end plate.

23. The structure of claim 22, wherein said compression element is a pin, and said compression means engages said pin at said second  
10    plate.

24. The structure of claim 23, wherein said compression element is positioned within a slot of said roller end assembly.

15        25. The structure of claim 20, wherein said shaft is positioned at least substantially outwardly from said end plate along the axis of said roll cover.

26. The structure of claim 20, wherein said rod of said  
20    compression means has an at least substantially flat end.

27. The structure of claim 26, wherein said springs are supported within said shaft along an outside diameter of said springs.

25        28. The structure of claim 25, wherein said shaft has an elongated internal bore, said shaft has internal threading within said bore, said elongated rod of said compression means is a screw means having external threading that engages the internal bore threading whereby rotating said elongated rod applies force against said first plate, thereby

compressing said springs and engaging said second plate against said compression element.

29. A compression assembly for a fiber roll cover including a shaft  
5 having an elongated axial length, which shaft is positioned outwardly  
away from said roll cover, a compression means housed within said shaft,  
said compression means comprising, (a) an elongated rod, (b) a first plate  
disposed at an end of said rod opposite an external end of said rod, (c) a  
plurality of springs, and (d) a second plate abutting said compression  
10 element; and a roll cover end plate and means for communicating  
compressive force from said compression means to said end plate.